
U.S. Department of the Interior • U.S. Geological Survey

MINERAL INDUSTRY SURVEYS

Gordon P. Eaton, Director

Reston, VA 20192

For information, contact:

Deborah A. Kramer, Commodity Specialist

Telephone: (703) 648-7719, Fax: (703) 648-7722

E-mail: dkramer@usgs.gov

Jesse Inestroza (Data), (703) 648-7968

MINES-DATA: (703) 648-7799

MINES FaxBack: (703) 648-4999

Internet: <http://minerals.er.usgs.gov/minerals>

MAGNESIUM IN THE FOURTH QUARTER 1996

Domestic primary magnesium production in the fourth quarter of 1996 was 31,100 metric tons, a slight increase from production in the third quarter, according to the U.S. Geological Survey. Total U.S. primary magnesium production in 1996 was 133,000 tons. Producers' shipments in the fourth quarter were 32,100 tons, and inventories decreased to 17,400 tons.

Imports of magnesium through November were 31% higher

than those in the corresponding period of 1995. Magnesium exports through November 1996 were 10% higher than exports in the same period of 1995.

Primary magnesium prices continued on a downward trend, as they have since the beginning of the year. Quoted magnesium prices are shown in the following table.

	Units	Beginning of quarter	End of quarter
Metals Week U.S. spot Western	Dollars per pound	\$1.70-\$1.80	\$1.70-\$1.80
Metals Week U.S. spot dealer import	do.	1.50-1.58	1.43-1.48
Metals Week European free market	Dollars per metric ton	2,700-2,850	2,600-2,700
Metal Bulletin free market	do.	2,450-2,900	2,400-2,650

U.S. producers also lowered their list prices for primary magnesium. On December 17, Magnesium Corp. of America (MagCorp) announced that it had lowered its list price for 99.8%-pure magnesium to \$1.80 per pound from \$1.93 per pound, where it had been since September 1995. Dow Magnesium followed suit in early January 1997 and lowered its posted price to \$1.80 per pound from \$1.93 per pound. Both Dow and MagCorp maintained their list price for AZ91D diecasting alloy at \$1.70 per pound.

Dead Sea Magnesium (DSM) produced the first magnesium ingot on December 14, 1996, from its new plant in Sdom, Israel. After a shake-down procedure that is expected to last until March 1997, full-scale production would begin. The plant, with an annual capacity of 27,500 tons, was scheduled to produce 10,000 tons of magnesium in 1997.¹

In Australia, Queensland Magnesium Corp. (QMC) entered into a partnership with U.S.-based Ford Motor Co., which was

expected to provide enough funding for QMC to proceed with its pilot magnesium production plant. Under terms of the agreement, Ford will invest \$30 million in a pilot-plant study and will gain a long-term contract for the eventual supply of 45,000 tons per year of magnesium. In addition to Ford, other investors will provide funding for a 2.5-year, precommercial phase to cover the construction and operation of a 1,000-ton-per-year demonstration plant and feasibility study; these other partners will hold no equity interest in the project. Total investment by all the partners was projected to be A\$73 million. QMC expected to begin the precommercial phase in February and to commission the demonstration plant in early 1998. Commercial plant construction is expected to begin in mid-1999, with start-up by late 2002.²

Noranda Metallurgy was proceeding with plans to construct a commercial-scale plant to recover magnesium from asbestos tailings in Quebec, Canada. Results from 10 months of pilot-

plant operation should provide fine tuning for the commercial plant. Noranda also set up a basic engineering study, to be completed by the summer of 1997. Construction of the 58,500-ton-per-year plant was expected to begin in April 1998, to be completed by April 2000.³

Hydro Magnesium completed a study focused on expanding capacity at its Becancour, Quebec, Canada, magnesium facility. The expansion is expected to increase primary magnesium production capacity by 10,000 tons per year and alloy capacity by 15,000 tons per year, as market conditions warrant. Alloy expansion increases are expected to be completed by the third quarter of 1997, while no date has been set for primary capacity expansion.⁴

Rapidly changing magnesium costs were cited as the reason for two U.S. auto manufacturers to cancel some programs to incorporate more magnesium diecastings into domestic passenger vehicles. Ford decided against switching from steel to magnesium in seat frames for its front-wheel-drive Windstar minivans, which was scheduled to begin with the 1997 models. Conversion of the seat-back frames, and eventually, the seat-bottom frames, was expected to require over 3,600 tons of magnesium diecasting alloy annually. The company also canceled the use of magnesium seat frame bottoms in its low-volume Mustang Cobra model.⁵ General Motors Corp. (GM) decided against switching from aluminum to magnesium in some of its transmission cases. GM said that it could achieve a weight reduction similar to that from magnesium substitution by designing aluminum cases with thinner wall sections than normal.⁶

Despite Ford and GM's actions, Isuzu Motors Ltd. chose Harvard Industries Inc. to produce die-cast magnesium valve covers for V-6 engines being produced in Japan. This application will require more than 270 tons of magnesium alloy AZ91 annually. Magnesium valve covers were expected to go into production later in 1997.⁷

Gibbs Die Casting Corp. announced plans to build a new 6,800-ton-per-year light alloy diecasting facility in Harlingen, TX. The new company, called Rio Grande Die Casting, will cast

magnesium parts in a variety of alloys including AM50, AM60, AZ91. The Texas plant is expected to employ 100 workers and be operational by late 1998.⁸

The German Government announced the establishment of a \$17 million, 3-year magnesium research program to be funded jointly with industry. The program goal is to develop and optimize magnesium alloy products and processes. A total of 57 German companies, including 5 auto manufacturers, are participating in the project.⁹

Taiyuan Heavy Machinery Import and Export Corp. of China requested a new shipper administrative review of the antidumping duty order on pure magnesium from China. Taiyuan maintains that it did not export magnesium to the United States during the period of investigation, and that it is not affiliated with any producer that did export magnesium during the period of investigation. Commerce is initiating the requested review and will issue final results no later than the end of September 1997.¹⁰

¹Platt's Metals Week. Israel's Dead Sea Magnesium Details Production Schedule. V. 67. No. 52, Dec. 30, 1996, pp. 5-6.

²_____. New Investors Boost QMC's Australian Magnesium Project. V. 68, No. 3, Jan. 20, 1997, pp. 4-5.

³Metal Bulletin. Noranda Moves Forward with Magnola Project. No. 8139, Dec. 19, 1996, p. 11.

⁴_____. Hydro Magnesium Completes Becancour Expansion Study. No. 8132, Nov. 25, 1996, p. 7.

⁵Wrigley, A. Magnesium Switch Withdrawn by Ford. Am. Met. Mark., v. 104, No. 235, Dec. 5, 1996, pp. 1, 6.

⁶_____. GM's Manufacturing Effort Slowing. Am. Met. Mark., v. 105, No. 3, Jan. 6, 1997, p. 4.

⁷_____. Isuzu Selects Harvard for Magnesium Covers. Am. Met. Mark., v. 105, No. 9, Jan. 14, 1997, p. 7.

⁸_____. Gibbs Plans To Open New Casting Facility. Am. Met. Mark., V. 105, No. 16, Jan. 23, 1997, p. 5.

⁹Germany's Magnesium Research Project. Light Met. Age, v. 54, Nos. 11, 12, Dec. 1996, p. 60.

¹⁰Federal Register. Pure Magnesium for the People's Republic of China (PRC): Initiation of New Shipper Antidumping Duty Administrative Review. (Int. Trade Admin., Dep. Commerce). V. 61, No. 252, Dec. 31, 1996, p. 69067.

TABLE 1
U.S. IMPORTS FOR CONSUMPTION AND EXPORTS OF MAGNESIUM 1/

(Metric tons)

	1995	1996				
		Jan.-Aug.	September	October	November	Jan.-Nov.
Imports:						
Metal	6,480	12,300	1,460	903	814	15,500
Waste and scrap	11,500	2,540	175	193	256	3,160
Alloys (magnesium content)	15,900	13,200	2,670	3,240	2,560	21,700
Sheet, tubing, ribbons, wire, powder, and other (magnesium content)	866	791	185	78	121	1,180
Total	34,800	28,900	4,490	4,420	3,750	41,600
Exports:						
Metal	21,500	11,600	1,420	1,900	1,280	16,200
Waste and scrap	3,540	5,510	803	979	536	7,830
Alloys (gross weight)	6,080	4,670	528	701	410	6,310
Sheet, tubing, ribbons, wire, powder, and other (gross weight)	7,200	5,830	466	870	314	7,480
Total	38,300	27,600	3,220	4,450	2,540	37,900

1/ Data are rounded to three significant digits; may not add to totals shown.

Source: Bureau of the Census.

Figure 1.--Magnesium production, shipments, and inventories

